

NEXT-GEN Digital



April Music Eximus DP1 DAC, Preamplifier, and Headphone Amplifier

Multi-Talented

Steven Stone

What constitutes a mid-priced DAC? There's a ton of room between the least expensive high-performance external USB DAC, such as the \$169 HRT MusicStreamer II, and the most expensive, such as an \$80,000 dCS combo stack. Almost any DAC that falls between \$1000 and \$10,000 could be considered "mid-priced" by some audiophile's standards. So, while the \$3200 April Music Eximus DP1 might be on the low side of mid-priced for anyone looking at \$10,000 DACs, it's too pricey for someone on a \$2000 DAC budget. But for \$3200 the Eximus DP1 delivers a near state-of-the-art DAC, robust USB implementation, low-noise multi-input digital preamp, excellent headphone amp, and a stylish looking retro/modern custom enclosure.

What's Inside The Box

Before we dive under its hood, let's take a moment to admire the Eximus DP1's enclosure. If its carved aluminum chassis reminds you of designs from Resolution Audio and Constellation Audio, that's because they were created by the same industrial designer—Alex Rasmussen at Neal Feay Design in Santa Barbara, CA. The DP1's overall look is modern and clean without being too sterile or self-consciously retro. The figure-eight-shaped volume knob reminds me of my first Nagra field tape recorder, and besides being a nod to the past, the knob's shape makes it easy to see your current volume level from across the room.

Other niceties that I consider necessities include provisions for simultaneously active balanced XLR and

single-ended RCA outputs. I used the balanced outputs for my main amplifiers and the unbalanced for a subwoofer. On the input side, all six of the digital inputs fully support 192/24 format, including USB. The DP1 also has two analog inputs, allowing the unit to function as preamplifier. Analog devotees will appreciate that the DP1's two analog inputs are pure analog with no A/D and D/A converters anywhere in the signal chain.

The front panel consists of a single on/off switch, a source-selector button with eight options, a source-lock LED, an on/off filter button, an upsample button with three options, a standard 1/4" headphone jack, a 1/8" mini stereo input, and the master volume knob. The filter is exclusively for headphone listening; it engages a cross-filter circuit that's intended to move a headphone soundstage out of your head. The three-way upsample button permits the user to choose no upsampling, upsampling to 96kHz, or upsampling to 192kHz. When you insert a headphone jack into the front headphone connector, the output to the back-panel outputs shuts off. While anyone who wants to use all three outputs simultaneously may find this feature to be a problem, I liked it. I could leave my amp and subwoofer on while listening to headphones. I also liked the single volume control for both headphone and regular listening. Couch potatoes, be forewarned, the DP1 does not include or support a remote control.

Most of the time I had the DP1 positioned so I could reach down with my left hand and adjust any of the controls without moving my head to look at them. It took maybe two days to be able to operate the DP1 "blind." In my mind that constitutes an ergonomically well-designed audio component.

Under the hood, the signal chain uses the Cirrus Logic CS8416 input chip that can accommodate sampling frequencies up to 192kHz, a low-jitter input receiver, and complete galvanic isolation to reduce external noise from external ground planes. In past reviews of DACs, I've seen and heard what a big difference the right USB implementation can make. April Music opted for the XMOS USB solution, which uses a 32-bit XS1-L1 processor and 1Mb of SPI flash memory. The digital signal then goes to a Burr-Brown SRC4192 chip for upsampling and digital conversion. Finally the digital signal is returned to analog via the dual-mono current-output 192kHz/24-bit Burr-Brown PCM1794A chip, which features less than 0.0004%THD and a dynamic range of 132dB. For its power supply the DP1 employs a custom-designed toroidal power transformer, which allows for very low output impedance. Even the circuit board has been physically optimized

for low noise and maximum separation between digital and analog components. Finally, the component-output analog-buffer module and headphone-drive module are made up of discrete components rather than an off-the-shelf integrated circuit.

Setup

Most of my listening was done at my computer desktop since this product was designed principally for this kind of listening environment. The signal chain was simple: USB from my Mac Pro to the DP1 and then a one-meter length of cable from the DP1 to a power amplifier. For some of my A/B tests I also used the DP1's S/PDIF and AES/EBU inputs.

The DP1's 3V (single-ended) outputs are slightly higher in output than the usual 2V standard, so with amplifiers that have a higher than standard 26dB gain you could have a gain mismatch,

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The Absolute Sound, Issue 209.

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but none of my amplifiers displayed any problems from this higher output level.

If you plan to use the DP1 as a fixed rather than variable-level output device, don't look for a button or switch to convert it to a fixed level. Merely turn the volume control all the way up for fixed-level use. While the first prototypes had a switch, April Music's Simon Lee told me he opted for no switch in the production versions because listening tests determined that removing the switch delivered better sonic results.

The Sound

When I listen to a stereo system the first question I ask myself is, "Which component is the weak link?" Whichever system I dropped the Eximus DP1 into, it was never the weakest link in the signal chain. During the time I've evaluated it, the DP1 was always articulate, dynamic, and musical.

If I had to choose a single word to describe the sonics of the Eximus DP1, it would be "revealing." Especially on higher-resolution material, such as my own live on-location recordings, I was amazed by the Eximus' ability to expose even the subtlest soundstage cues. On my recording of a great young acoustic band, The Deadly Gentlemen, which I made with only two mics in a small schoolhouse, I could clearly follow the way the acoustic bass' energy builds up in the corner of the room and then rolls out into the rest of the performance space. The DP1 portrays the three-dimensionality of the soundstage as accurately and with as much detail as any DAC I've ever used.

I've written before about how important the USB interface is to the overall sonic quality of a USB DAC. The DP1's USB is very good, and in the same league as the previous generation of Empirical Audio's Off-Ramp 4 USB interface device. I did some matched-level A/B tests using the Off-Ramp's S/PDIF output into the DP1 compared to the DP1's own USB implementation. Although it was not an ideal A/B, due to the lag time of software changes (closing and reopening Pure Music and iTunes as well as switching audio outputs from the system preferences takes at least 30 seconds), I could not hear any consistent and meaningful differences between the two signal chains. Sometimes I preferred one chain to the other, but my preferences were always source-material dependent. The DP1's upsampling settings also affected which signal chain I preferred. Shortly after the DP1 arrived the Off-Ramp 4 went back to Empirical Audio for an upgrade to current specs, which will undoubtedly change its performance for the better.

Unlike other DACs I've used with variable upsampling options, with the DP1 these different options not only made a sonic difference, but the setting that sounded most correct varied depending on source material. Sometimes within a single album I found that different cuts sounded better with different upsampling rates. On Randy Newman's album *12 Songs*, "Underneath a Harvest Moon" was best at 96k, "Burn Down the Cornfield" sounded better at 44.1, and "Lucinda" had the cleanest vocals at 192k. On my own 96k/24 recording of Richard Stoltzman playing Copland's Clarinet Concerto, I found that the 96k upsampled rate had slightly better midrange presence and body on Stoltzman's instrument than either the 44.1 or 192k settings.

Anyone who's come to the firm opinion that "upsampling is bad" will find the DP1's upsampling a revelation. Unless you try



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all three settings on each track, you can never be sure which one is best. Sometimes I found that upsampling to 192kHz resulted in a tight and overly controlled sound to the point of becoming mechanical, but other times upsampling to 192kHz delivered an additional level of control that rendered slightly messy mixes more articulately than lower sampling rates. As it says in the DP1's owner's manual, "there are no fixed rules for the selection of upsampling." That proved to be an understatement.

The Eximus DP1's headphone filter's effects were more consistent and less sonically illuminating. Whenever I employed the filter, regardless of the headphones, the results were a slower, thicker midbass and lumpier bass response. It was like going from a good modern tube amplifier to an unrestored 50-year-old triode amp—euphony and homogenization intruded on the signal. Perhaps for some listeners the filter's soundfield effects

will make up for the losses in harmonic balance and transparency, but I much preferred the DP1's headphone feed without the filter in the circuit.


I used the DP1's analog inputs to compare the Weiss DAC 202 with the DP1. Once more A/B comparisons took longer to switch than I would like—programs had to be shut down and reopened along with confirming the MIDI settings. But despite the delays it was clear that the DP1 was almost in the same league as the Weiss. Both did a superb job of illuminating the entire soundstage and placing instruments accurately. The Weiss produced a slightly larger overall soundstage, but the DP1 was equally well focused. Harmonically the two DACs were very similar, both with well-defined low bass and vividly dynamic contrast. At times I preferred the DP1, due in large part to its slightly lower noise floor. But the Weiss had extensive handicaps—I had

to use its single-ended outputs rather than the balanced analog output. Plus there was additional cabling and analog circuitry and connections inside the DP1. So, I wouldn't go so far as to say the DP1 was the Weiss DAC 202's equal, but it was closer than I expected.

Comparing the DP1 with the Wyred4Sound DAC proved to be an equally interesting exercise. Even though the two DACs had very similar harmonic balances and dynamic signatures, the DP1 was a bit more musical and slightly less mechanical. The DP1 also had an ease to its dynamic presentation that I noticed especially on aggressive pop, such as Toy Matinee's only release. The two DACs have similar feature sets, except the DP1 has two pure analog inputs. Still, the Wyred4Sound DAC2 is less than half the price of the DP1. And no, the DP1 doesn't sound twice as good as the DAC2. But it does look better, with a far more ergonomically appealing front panel. Finally, the DP1 is more likely to transport you to the point where you don't care much about the equipment because you're enjoying the music so thoroughly.

And how does the DP1 compare with the Bel Canto Dac 3.5, which I reviewed in Issue 216? Unfortunately the 3.5 was returned to Bel Canto over a month before the DP1 arrived, so I never had an opportunity for any direct A/B testing. But I will share this comparison: The USB interface on the DP1 is noticeably better than the Bel Canto 96/24 Link USB interface box. Also, the sonic differences between the USB and the S/PDIF inputs on the DP1 were much smaller than they were between USB and S/PDIF through the Bel Canto Dac 3.5.

I'd be remiss if I didn't spend some time using the DP1's headphone amp. The DP1 had more than enough gain and power to



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Digital inputs: USB 2.0, I²S, two 75-ohm coax, 110-ohm AES/EBU, optional, USB 2.0

Analog input: RCA, mini-jack

Analog outputs: RCA, XLR, headphone

Input sampling frequency: Up to 192kHz

Upsampling: To 192kHz (default), 96kHz, or bypass

DAC: Two Burr-Brown PCM1794A 192kHz/24-bit

Dynamic range: 132dB

THD+N: 0.0004%

Max input level: 4.8V RMS

Output signal level: RCA, 3.0 V RMS; XLR, 3V RMS

Dimensions: 208 x 62 x 291mm

Weight: 8 lbs.

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ASSOCIATED EQUIPMENT

Source Devices: MacPro model 1.1 Intel Xeon 2.66 GHz computer with 16 GB of memory with OS 10.6.7, running iTunes 10.2.1 and Amarra 2.1.1 music playing software, Pure Music 2.0 music playing software, Audirana music playing software

DACs: Weiss DAC 202, Empirical Audio Off-Ramp 3, Wyred4Sound Dac2, Musical Fidelity M-1 DAC

Amplifiers: Parasound A23, Edge Electronics AV-6, Accuphase P-300 power amplifier, Perreaux E110 amplifier, Krell S-150 monoblock amplifiers

Speakers: Aerial Acoustics 5B, ATC SCM7s, Silverline Minuet Supremes, Paradigm S1s, Quad 11Ls, Role Audio Kayaks, Earthquake Supernova mk IV 10 subwoofer, Velodyne DD+ 10 subwoofer, JL Acoustics F112 subwoofers

Headphones: Sennheiser HD 580, Grado RS-1, Ultimate Ears Reference Monitors

Cables and Accessories: Locus Design Polestar USB cable, Locus Design Nucleus USB cable, Wireworld USB cable, PS Audio Quintet, AudioQuest CV 4.2 speaker cable, AudioQuest Colorado interconnect, Cardas Clear interconnect, Crystal Cable Piccolo interconnect, Empirical Audio Coax digital cable, and Audioprism Ground Controls

drive low-efficiency headphones. I never got more than 1/3 of the way up on the volume knob. The sound was clean and very well controlled, especially in the bass. And while headphones still lack a certain visceral power when it comes to bass, the DP1 did a yeoman's job delivering some serious wallop when needed. Resolution and low-level detail were limited only by my choice of headphones. The best results came with my pair of Ultimate Ears Reference Monitor in-ear canal phones.

Final Thoughts

When I asked Simon Lee, April Music's president, what the design goals were for the DP1 he said, "I wanted to make a DAC/preamp/headphone amplifier that can be used as a desktop high-quality USB DAC, high-end normal analog preamplifier, and top-quality headphone amplifier—all in one small box. My design goals were for a DAC/preamp that was internally complicated but externally user-friendly and intuitive in operation, had natural sound, a reasonable price, and the best-quality headphone amplifier I could make." I think he succeeded brilliantly. **tas**

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